Delaware/Maryland 4R Alliance Survey for Annual Implementation Report

All answers should reflect practices completed in 2019.

A glossary is provided on the back of the survey – words with an * next to it have more information provided in the glossary.

1. How many acres do you farm in Delaware? _____ acres in 2019.
    a. Break down per crop. Corn _____ acres. Soybean _____ acres. Wheat _____ acres. Other: _____
2. Are your fields bordered by a minimum of a 10 foot grass or tree buffer*? Yes ☐ No ☐
    a. What is the purpose of the buffers? _____
3. Are there areas on your farm you are careful to not place fertilizer? (ex: ditches, buffers, wells)
    ☐ Yes ☐ No If so, where?: _____
4. For nutrient application, do you use (owned or contracted) GPS* guided equipment? ☐ Yes ☐ No
5. What equipment do you use (owned or contracted) that is variable rate*? Check all that apply.
    ☐ Planter ☐ Sprayer ☐ Spreader ☐ Irrigation ☐ Other: _____
6. How often are soil tests are pulled on 100% of your acres: ☐ Annually ☐ Every 2 Years ☐ Every 3 Years
    a. My soil samples are pulled (check all that apply):
        ☐ Fall/After Harvest ☐ Spring ☐ Other: _____
        ☐ I or my employee pulls my samples ☐ A consultant or company pulls my samples
    b. My soil samples are pulled on a (check all that apply): ☐ Grid* ☐ Zone* ☐ Field*
        i. At what scale: _____ (acres)
7. How many acres of irrigated land do you farm in Delaware? _____ acres
    a. How many acres do you fertigate* in Delaware? _____ acres
8. How do you apply manure? ☐ Broadcast* ☐ Inject* ☐ I do not apply manure (skip questions a – c)
    a. Do you incorporate* your manure? ☐ Yes ☐ No
        i. Within what time frame; assume ideal conditions? ☐ Within 24 hours ☐ Within 48 hours
    b. Is your manure tested for nutrient composition? ☐ Yes ☐ No
        i. How often do you test each source of manure? ☐ Annually ☐ Bi-Annually
    c. What seasons do you typically apply manure? ☐ Spring ☐ Fall ☐ Other: _____
9. How do you apply fertilizer? Mark all that apply. ☐ Broadcast ☐ Banding* ☐ In-Furrow*
10. Do you use starter or pre-plant fertilizer? ☐ Starter* ☐ Pre-Plant* ☐ Both ☐ Neither
11. Do you sidedress* Nitrogen? ☐ Yes ☐ No
    a. How do you determine your nitrogen sidedress rate? (Check any that apply)
    ☐ PSNT (Pre Side-dress Nitrogen Test)* ☐ Nitrogen Modeling* ☐ According to my plan*
12. What percentage of your nutrients do you apply at the following times:
    ___ % pre-plant ___% starter ___% sidedress/in-season
13. Do you apply less than University rates or less than your plan on some areas of your fields? ☐ Yes ☐ No
14. Do you use a Nitrogen Stabilizer*? ☐ Yes ☐ No
    a. Which of the following do you use?
        ☐ Urease Inhibitor*
        ☐ Nitrification Inhibitor*
        ☐ Other Enhancements? (humic, biogrowth): _____
15. How many acres of cover crop* did you plant this year, that you did not receive cost-share* for? _____ acres
16. Since you started working with/under a nutrient management plan, what changes have you made that increased or decreased your applications of N and P the most over these years?

    _____

    _____

    _____

Delaware/Maryland 4R Alliance Survey for Annual Implementation Report

All answers should reflect practices completed in 2019.

GLOSSARY

2: Buffer: Natural or artificial vegetated area maintained alongside agricultural fields to help mitigate and control the air, soil and water quality.

4: GPS (Global Positioning System): Computer technology using satellites to identify a precise location

5: Variable Rate: A type of application where the material is applied based on a specific need-based prescription for differing areas within a field. (seed, fertilizer, irrigation, etc.)

6a: Grid: A uniform network of sectioned field areas; usually about 5 acres.

6a: Zone: A series of sectioned field areas that are grouped by similar characteristics. This may be done in the field by soil type, landscape positioning, drainage type, etc.

6a: Field: A soil sample taken is used to represent the entire field.

6b: Scale: The unit area for which you are using to determine your sampling methods. For example, the soil test report(s) you received apply to fields/sections of a field with an average size of 10-20, 20-30 or 30-40 acres.

7a: Fertigate: Fertilization done by mixing fertilizer nutrients to the irrigation water.

8: Incorporate: A practice that mixes manure or fertilizer into the soil profile (tillage, vertical tillage)

8: Broadcast: The practice of surface spreading fertilizers or manure on top of the field.

8: Inject: The manure (and chemical) application practice of placing manure under the soil surface without tillage.

9: Banding: A fertilization practice that applies nutrients in rows at a predetermined distance from the planted crop seed.

9: In Furrow: a narrow trenched row, typically where seed is planted

11: Starter: application of fertilizer at roughly the same time as planting crop

11: Pre-Plant: application of fertilizer days or weeks prior to planting crop

12: Sidedress: application of fertilizer to crop in-season/during high nitrogen uptake, typically for corn between 12-24 inches tall

12a: PSNT (Pre-sidedress Nitrate Test): an in-season soil test used to determine if a yield response is likely from additional application of sidedress Nitrogen

12a: Nitrogen Modeling: a management tool offered by Consultants recommending Nitrogen applications based on a variety of factors throughout a growing season based on a variety of factors.

12a: Plan: a nutrient management plan written by a certified consultant outlining when and how much fertilizer to apply to your crop based on University recommendations and/or your soil test results

14: Nitrogen Stabilizer: a fertilizer additive to decrease off target movement of nitrogen – decreasing volatilization, leaching, and/or denitrification – allowing increased uptake by crops

Examples:

14: Urease Inhibitor: a fertilizer additive that slows the conversion of urea to ammonia thus **reducing the loss of nitrogen through volatilization** (above ground protection)

Examples: Agrotain Ultra, Anvol, NBPT

14: Nitrification Inhibitor: a fertilizer additive that slows the conversion of ammonium to nitrate, thus prolonging the period of time that nitrogen is in the "protected" form and **reducing its loss from the soil by leaching and denitrification.** (below ground protection)

Examples: Nitrapyrin and DCD

15: Cover crop: a crop planted during the winter months, in fields which would otherwise be fallow, to prevent the loss of soil nutrients, minimize soil erosion, and enhance soil properties; this crop is to benefit the soil and water quality and generally not to be harvested (winter wheat?)

15: Cost-share: a program that pays the grower to participate in, if all guidelines are met